ITL 950C



THE ITL 950C COMPUTER KEY MACHINE

Operations Manual

ITL 950C Operating Manual
TABLE OF CONTENTS

MACHINE SPECIFICATIONS

Operating Voltage	- 120 Volts AC. 2 Amps 60 Hz. - 12 Volts DC. 10 Amps
Operating Current	- AC 1.5 Amp PK. 25 Idle. DC 10 Amp. PK. 1 Idle.
Operating Frequency	- 60 Hertz/DC.
Motor Horsepower	- 1/8 H.P.
Cutter Speed	- 1600 R.P.M.
Motor Bearing Type	- Sealed Roller Bearing
Standard Codes	- UP TO 800
Custom Codes	- 160 (User Modified)
User Definable Flats	- 10 with range of 0.001" to 0.140"
Display Format	- 4 Line 20 Character Alpha-Numeric Micro Power LCD
Keyboard Type	- 20 Key Sealed Membrane
Computer Interface	- RS232C 75-9600 Baud - Parallel IBM compatible
Repeatable Accuracy	- (+/-) 0.002"
Weight	- 48 Lbs. Packaged

KEY FUNCTIONS

DESCRIPTION

[MFG B] Displays or selects a manufacturer as well as insert and flat number.

[CODE D] Displays or selects key code to be cut. Displays cutter angle where applicable.

[L SPACE K] Displays Maximum Space to be cut. Also shows tip type and whether key is paused or not. If paused this key will put an l in the display to indicate a Left cut angle.

[R DEPTH M] Displays Max and Min Depths. Note: there maybe invalid depths between the max and min values that are invalid, as in Simca. If the table is paused this key will put an R in the display to indicate a right cut angle.

[C.F. Q] Displays selected amount of depth correction, flat number, units, plunge mode and cut feed rate.

[CUT S] Starts cutting operation. If the table is paused this resumes cutting after changing angles or space position of cutter.

[CLEAR] Corrects number entries and aborts functions.

[RESET] Resets the machine, same as turning power on. Also aborts a cutting operation.

[0] [9] Entry keys for ID'S, Codes, Etc.

[10] Used to enter 11th depth in code i.e. 0-10. (Displays as **A**)

[-] Used to switch sign of C.F. and Calibration numbers, -5 is negative. Used also to bypass a cut position in code. (Displays as X)

[K/L] Alphabetical keys A-Z are arranged in pairs. The top red letters are accessed directly. The bottom section of each key is accessed by pressing the Alt key first.

STARTING THE ITL 950C

The, ITL950C should be plugged in to a switch operated power bar with surge suppression. Check serial plate for correct machine voltages and current requirements. Turn on the power switch located on the back of machine. Follow instructions on the display.
(Move vise to right or left.)

12-VOLT POWER INVERTERS

THE USE OF A POWER INVERTER IS NOT RECOMMENDED WITH THE ITL950C. There is a problem of a stable voltage supply with most inverters. When the voltage drops the ITL950C will try to reset and can damage the electronics. A low voltage does not matter with a drill or drive motor but does matter to the **ITL950C. WE RECOMMEND CONNECTING THROUGH A 20 Amp FUSE TO THE VEHICLE 12-VOLT BATTERY FOR MOBILE USE.**

SELECTING A MANUFACTURER

Press the [MFG B] key to display the current **ID**. number. To load a new **ID.** number, enter the required **ID** number and [MFG B]. To select Manufacturer 167 (WEISER), press [1] [6] [7] then [MFG B]. The **ITL950C** will display **MANUFACTURER 167 INSERT 2 FLAT 8,** indicating the new ID is accepted and has loaded the key specifications.

CUTTING A DIRECT ENTRY CODE (key cuts)

To load a new direct entry code press the desired cuts then press [CODE D]. The **ITL950C** will display the desired cuts, indicating it has accepted the cuts.

CUTTING A KEY

In this example we will use MFG number 167 WEISER and cuts 42312.

1) Select Manufacturer 167 by pressing [1] [6] [7] followed by [MFG B] The ITL950C will display **MANUFACTURER 167 INSERT 2 FLAT 8,** indicating the new ID is accepted and it has loaded the key specs. Insert 2 should be used to hold the blank and Flat 8 is the width of each cut.

2) Select key code 42312 by pressing keys [4] [2] [3] [1] [2] then [CODE D]**.** The ITL950C will display CODE 42312 indicating the code has been accepted.

3) Using insert 2 put a blank in the vice. Flip up the shoulder reference arm to position the key but remember to put it down before cutting. Tighten the vice and press [CUT 8] then turn the space handle clockwise until the bar graph disappears and the numbers pass thru “0000”. The cutter motor will start and the space handle motion should be reversed to counter clockwise. Continue turning the handle, at about one revolution per second, until the cuts are completed and the cutter motor stops.
****Do not leave the machine motor running when not cutting a key as this may damage the control transistors.**

CUTTING A CAR KEY TO CODE

To cut the sample car key code **KZ92** press [K/L] [ALT] [Y/Z] [9] [2] then [Search] then move the currsor using the up down arrow key to **GM 10C 95+** and press [Select]. Insert the suggested insert 1FL and install the suggested key P1106 or equivalent. Now press [CUT S] Turn the handle clockwise until the blocks disappear and the numbers count down to 0 and the cutter starts. Now turn the handle counterclockwise untill the first side of the key is cut and the cutter stops. Turn the key over and press cut, turn the handle clockwise until the blocks disappear and the numbers count down to 0 and the cutter starts. Now turn the handle counterclockwise untill the second side of the key is cut.

ALWAYS MAKE SURE THE CUTTER HAS STOPPED BEFORE REMOVING A KEY

MAKE SURE THE MOTOR IS OFF BEFORE REMOVING THE KEY.

CALIBRATING THE ITL950C

NOTE Ill IT IS POSSIBLE TO RUN THE CUTTER INTO THE VICE WITH IMPROPER CALIBRATION. BE CERTAIN OF DEPTH CALIBRATION. YOU MAY ABORT THE CUTTING OPERATION AT ANY TIME BY PRESSING THE RESET KEY. THIS WILL STOP THE CUTTER AND RETURN THE KEY TO THE IDLE POSITION. DO NOT AT ANY TIME ALLOW THE CUTTER TO TOUCH THE VICE, AS IT WILL DAMAGE THE CUTTER.

TO CHECK CALIBRATIONS

First select **MFG 391** this is **"Schlage".** Next, place insert #2 in the vice jaw and slide a blank onto it. Push the key along the top of the insert until the bottom shoulder comes up hard against the insert. Check the right hand side of the vice. Make sure the insert is tight against the stop screw. Tighten the vise and press [0] [CODE D] [CUT S]. When the cut is finished, remove the key and measure the distance from the back of the blank to the bottom of the cut with a micrometer caliper. Subtract the reading you get from the .335 thousand depth it should be and note the number down. Measure the distance from the bow of the key to the center of the first cut. As above, subtract the reading from the .231 thousand space it should be.

TO ADJUST CALIBRATIONS

Press the [-] [1] [2] [3] [MFG B] keys to enter the **EDIT** mode and then press [C.F. Q]. The display will show **EDIT CALIBRATION.** Press [R DEPTH M]. Now the display will show **ADJUST DP BY 000.** If in our sample our depth reading is .340, .335 minus .340, equals -.005. On the keypad enter [5] [-] [R DEPTH M]. Now the display will read **–005.**. To return to **EDIT CALIBRATION,** push the [C.F. Q] key twice, and then press the [L SPACE K] key. In our sample, if the space reading is .229, subtract this from .231 and the answer is .003. Now press [3] [L SPACE K] and the display will read **003.** Press the key [RESET] twice and follow display instructions to return to home.

Correct depth calibration is more critical than space calibration, but the more exact they both are, the better the resulting keys will work. Remember that the allowable range for calibration is from +0.127 inches to-0.127 inches. The machine is factory set for 0 calibration error so you must be careful not to enter a depth value that would allow the vise to contact the cutter. Double check your calibration numbers before entering them and if possible make small changes until you are familiar with this operation. All calibrations are done using the insert as the stop. When this has been completed, raise the reference arm up against the shoulder of the key to ensure that it has not been moved or bent out of position. The reference arm should make light contact with the blank shoulder, if not, loosen the two 5/32 allen head machine screws holding the reference block to the vice block and move the reference arm against the key shoulder and retighten the screws.

Menu of [C.F.] key temporary functions

1. Correction (depth).
2. Flat number (width of root of cut).
3. Cut mode (laser or normal)
4. Half depth mode (cuts between current and next depth).
5. Plunge mode (cut entry method).
6. Cut feed rate (speed that plunge method uses).
7. Bypass home.
8. Units (inches or metric).

It should be noted if the machine is turned off, the [C.F.] key pressed or the manufacture I.D. changed, all [C.F.] key functions revert to the default settings.

SETTING TEMPORARY DEPTH CORRECTION

1. The correction function affects the depth of all cuts. A negative correction factor makes cuts deeper while a positive correction factor makes cuts shallower. The range is from -.009 to +.009 inches in .001 inch steps. Press [C.F.] then a number from [1] through [9]. Use the [-] key to indicate a negative value. Press [CLEAR] to correct your entry and press [C.F.] to set the correction.

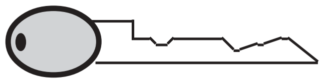
A special note regarding the correction function. If the resulting depth is out of the absolute limits of 0.110 to 0.465 inches, that cut will not be made.

CHANGING FLAT NUMBER

2. The flat number is used to select the width of the bottom of a cut. There are 10 possible flats to choose from and they are all user definable. The flats listed in the table on page 3 have been preset at the factory. Refer to setting custom flat widths in the Custom Configuration section for more details.

Press [C.F.] twice. The ITL950C will now display **FLAT NUMBER** (current flat). To change the flat number to 2, press [2], then [C.F.] to set the new flat number. The ITL950C will now display **FLAT NUMBER 2,** press [CLEAR] to return to **READY.**

TEMPORARY CHANGE TO LASER CUT MODE



In the laser cut mode cuts are made from flat edge to flat edge without the normal inbetween cut points. From the ready prompt push the **C.F.** key three times, the display will read normal cut mode. Push the (**-**) key to toggle to the laser cut mode and back to the normal cut mode.

HALF DEPTH MODE

4. Press [C.F.] four times. The ITL950C will now display **HALF-DEPTH = NO** This is the normal mode. Push [−] to switch to the half depth mode and all cuts will be made half way to the next depth. When cutting the key the second line will read < 1/2 Depth = on >.

PLUNGE CUT MODE

5. Press [C.F.] five times. The ITL950C will now display **PLUNGE = NONE** (Normal cut method) **PLUNGE = ALL** (for keys that require straight in and out movement of the cutter) Safety deposit or flat steel. **PLUNGE = FIRST** (for keys that require a vertical entry in the first position to avoid cutting the key shoulder). Press [−] key to toggle to required function, press [CLEAR] to return to **READY.**

CHANGING CUT RATE

6. The cut rate is a number from 1 through 4 that defines how fast a blank is fed into the cutter. 1 is the fastest rate and should work for most blanks. However if the cutter becomes dull or thick—blanks are used you may need to select a slower speed. To select a cut rate of 3, proceed as follows. Press the [C.F.] key 6 times. The display will now read **CUT FEED RATE (current rate)** press [3] and [C.F.] **,** the display will now read **CUT FEED RATE 3.** Press [CLEAR] to return to **READY.**

BYPASS HOME MODE

7. Press [C.F.] seven times. The ITL950C will now display **BYPASS HOME = NO** This will reset the space calibration after every cut. Press the [−] key to toggle to **BYPASS HOME = YES** this will temporarily turn off the space calibration. This can be used for impressioning locks faster. Press [CLEAR] to return to **READY.**

UNITS (METRIC OR INCHES)

8. Press [C.F.] eight times. The ITL950C will now display **UNITS (INCHES OR METRIC).** Press [−] key to toggle.

CUSTOM EDIT MODE

Custom default entries using the [CODE] key remain in memory when the machine is reset or turned off.

SETTING DEFAULT MANUFACTURER ID

The default or power on ID is the MFG ID number the machine selects when reset or turned on. As with any ID, it must be in the range of 1 through 960, and the table must be correct. It can be set by you and remains set until you select a different ID.

1) Press the [−] [1] [2] [3] [MFG B] keys to enter the **EDIT** mode. The display will show **EDIT.**

2) Press the [CODE D] key to display the current default ID. To change the ID to 23, press [2] [3] followed by [CODE D]**.** The ITL950C will display **DEFAULT ID 23.**

3) Press the [CLEAR] key to return to the **EDIT** mode. Press the [RESET] key and follow display comands and the new ID will be displayed when the ITL950C completes the self-test sequence.

SETTING THE BAUD RATE

See page 14 for table and instructions.

UNITS (INCHES – METRIC)

Press [−] [1] [2] [3] [MFG B] and the [CODE D] key three times and the display will read **UNITS = INCHES.** To read the display in metric, press the [−] key. Press the [RESET] key twice and follow display instructions.

SETTING DEFAULT CUT RATE

The default cut rate is a number from 1 through 4 that defines how fast the blank is fed into the cutter. 1 is the fastest rate and should work for most blanks however if the cutter becomes dull or thick blanks are used, you may need to select a slower speed. Proceed as follows to set the default cut rate. Press [−] [1] [2] [3] [MFG B] to enter the **EDIT** mode. Press [CODE D] four times to display **CUT FEED RATE(current feed rate).**To change the rate to 2, press [2] [CODE D]

The machine will now display **CUT FEED RATE 2**. Press [CLEAR] and [RESET]**.** Follow display instructions and all plunge cuts will be made at cut rate 2.

SETTING DISPLAY MODE

Press [−] [1] [2] [3] [MFG B] to enter the **EDIT** mode. Press [CODE D] five times to display **BAR GRAPH DISPLAY MODE SELECTED** or **NUMERIC DISPLAY MODE SELECTED.** Press [−] key to toggle. Press the [RESET] key twice and follow display instructions.

SETTING THE LCD DISPLAY CONTRAST

Press [-] [1] [2] [3] [MFG B] to enter the **EDIT** mode. Press the [CODE D] key six times and the display will read **SET LCD CONTRAST 9=DARK..10=LIGHT.** Press and hold the [9] key and the display will darken. Press and hold the [10] key and the display will lighten. Press the [RESET] key twice and follow the display instructions.

RESET CODE (for factory use)

SETTING CUSTOM FLAT WIDTHS

The flat width determines the width at the bottom of a cut. There are 10 possible flats to choose from and they are all user definable. The following section describes how to set your own flat width.

**** CAUTION ** FLAT WIDTHS 1 THRU 8 ARE USED WITH THE MANUFACTURER ID'S AND CHANGING THESE FLAT WIDTHS WILL CAUSE WRONG FLAT WIDTHS TO BE CUT.**

Press [-] [1] [2] [3] [MFG B] to enter the **EDIT** mode. Press [1] and [CUT 8] and the display will show **FLAT 1 = 014. NOTE:** Flat 1 is the flat width of the installed cutter and when cutters are changed, flat 1 must be changed to match the flat width of the new cutter. Pressing [CUT 8] will step through all the 10 flats. To change a flat, enter the desired flat width and press [CUT 8]. For a table of flat numbers and widths refer to the table below.

FLAT WIDTH TABLE

FLAT	WIDTH	EQUIVALENT CUTTER
1	0.014 INCH	CW1012
2	0.024 INCH	37MC USE FOR ASSA
3	0.044 INCH	CW1011
4	0.048 INCH	14MC
5	0.036 INCH	4711
6	0.032 INCH	Assa
7	0.070 INCH	20MC
8	0.090 INCH	CC100
9	INCH	USER DEFINED WIDTH
10	INCH	USER DEFINED WIDTH

Note: If a CW1011 cutter is installed, and the manufacture selected calls for a #1 or #2 flat the display will read the warning FLAT LESS THEN CUTTER INSTALLED.

CREATING A CUSTOM ID TABLE

There are 160 custom IDs you can change yourself the range is 801 to 960. They support the same features as the fixed IDs. The following sections explain how to create or edit your own custom ID. The last page of the manual contains a form that should (MUST) be completed before starting to create a new ID. Photocopy the last page there is only one.

NOTE: The following instructions are set to be followed in a consecutive manner and will not work properly on an individual basis. Pressing [MFG B] repetitively will cycle you to an individual function.

SELECTING ID TO BE CREATED

Enter the EDIT mode by pressing the [-] [1] [2] [3] [MFG B] keys.

To create ID 803, press [8] [0] [3] followed by [MFG B] The ITL950C will display **EDITING ID 803.** You have now set the ID number to be edited.

Press [MFG B]**,** screen will display **ENABLE PAUSE (Y or N)** press [-] to toggle. Pause is used with keys that require different cut angles as with **MEDECO(c),** safety deposit box keys and other flat steel keys. When pause is enabled, the machine will stop the cutter after each cut.

SETTING TIP TYPE

Press [MFG B]**,** screen will display **TIP TYPE = 3.** The tip type in an ID determines which reference point is used to cut a key. To enter the new tip type of 2 press [2] [MFG B]**.**

TABLE OF TIP REFERENCE POINTS

TIP REF #	OFFSET	RANGE OF SPACES	NOTES
0	0.000 INCHES	0.001-1.350 INCHES	SHOULDER REFERENCE
1	1.025 INCHES	0.000-0.749 INCHES	SAFETY DEPOSIT KEYS
2	1.150 INCHES	0.000-1.149 INCHES	USE INSERTS 1A, 1B, 1S.
3	1.350 INCHES	0.000-1.349 INCHES	REFERENCE FROM RIGHT VISE EDGE

SELECTING A FLAT

Press [MFG B] the ITL950C now displays **FLAT NUMBER —.**

The flat determines how wide the bottom of each cut will be. Note: flat 1 produces the same width as the cutter being used.

The flat ranges from 1 through 10. To select flat 4, press [4]**,** followed by [MFG B]**.** The display will now show **FLAT 4**. Refer to the table of flats on page 8.

SELECTING INSERT NUMBER

Press [MFG B] the ITL950C will now show **INSERT —.** Refer to the following table for further information on inserts. To select insert 3, press [3] followed by [MFG B]**.** The display will now show **INSERT 3.** Press [MFG B] to continue. Clear may be used to correct entries or return to edit mode.

DEPTH LIMITS FOR VISE INSERTS

INSERT	NUMBER OFFSET FROM TRUE 0	RANGE OF DEPTHS
1	0.000 INCHES	0.465 - 0.180 INCHES
2	0.035 INCHES	0.430 - 0.145 INCHES
3	0.070 INCHES	0.395 - 0.110 INCHES
4	0.100 INCHES	0.365 - 0.080 INCHES

EXTENDED TABLE

Press [MFG B] the **ITL950C** now displays **EXTENDED TABLE Y/N** Press [–] to toggle. The table must be set to (Y) for keys requiring 11 or 12 spaces.

When you select the extended table function, the ID # following the one you are currently editing will contain the extra spaces. For example if you were editing ID 803, and selected the extended table function, ID 804 would contain the 2 extra spaces. **Note:** You should not use ID 804 as a valid ID. When using the extended table use the maximum space value in the first table, in this case 803 should be set to 10 and all 10 spaces must be valid. Edi t the second ID in this case 804 as with any other custom ID however you need enter only spaces 1 and 2. Space 1 would be the 11th space in an extended ID and space 2 would the 12th space.

MAXIMUM SPACE

Press [MFG B] the **ITL950C** now displays **MAXIMUM SPACE.** The range is 1 to 10. To select a maximum space number of 7, press [7] followed by [MFG B]. The display will now show **MAXIMUM SPACE 7.** The maximum space number is used to verify correct table set-up, define table limits and determine code length. Enter [1] and [0] for 10th space, not the [10] key.

MAXIMUM DEPTH

Press [MFG B], the **ITL950C** now displays **MAXIMUM DEPTH**. The range is 0 to 10 (not the [10] key!). To select a maximum depth number of 8, press [8] followed by [MFG B]. The display will now show **MAXIMUM DEPTH 8**.

The maximum depth number is used to verify correct table set-up, and define table **limits.**

MINIMUM DEPTH

Press [MFG B] the **ITL950C** now displays **MINIMUM DEPTH**. The range is 0 to 9. To select a minimum depth number of 1, press [1] followed by [MFG B]. The display now shows **MINIMUM DEPTH 1.** The minimum depth number is used to verify correct table set-up, and define table

limits. Press [MFG B] to return to **EDIT.**

NOTE: PARAMETER TABLE IS COMPLETE PLEASE REVIEW THE TABLE FOR ACCURACY.

To review the table, continue pressing the [MFG B] key until the display returns to **EDIT.**

SETTING VALUES IN SPACE TABLE

Press [1] [L SPACE K] the ITL950C will display; **SPACE 1 = (0000).** Enter the desired space information in thousandths of and inch e.g. .250. Press [2] [5] [0] on the keyboard, then press [L SPACE K] to set entry and [L SPACE K] to continue to **SPACE 2** ect., until all space entries are completed. The ITL950C will automatically return to **EDIT**.

SETTING VALUES IN DEPTH TABLE

Press [0] [R DEPTH M] the ITL950C will display **DEPTH 0 = (** - - - - **).** Enter the desired depth information in thousandths of and inch e.g. .335. Press [3] [3] [5]. Then [R DEPTH M] to set entry and [R DEPTH M] to continue to **DEPTH 1=0000.** Now continue to make entries until all depth entries are completed. The ITL950C will automatically return to **EDIT**.

Press [RESET] key, the ITL950C will display **PUSH "—" TO UPDATE TABLE, CLEAR TO CANCEL.** Press [−] key to set entries. Now follow display commands to return to default.

To sum up be sure your entries are all correct and should your new code fail to work as expected, **DON'T PANIC,** recheck the table and you will likely find an error in one of your entries.

To view or edit your entries press [−] [1] [2] [3] [MFG B]**,** display will read **EDIT.** Press [8] [0] [3] [MFG B]**,** display will read **EDITING ID 0803** continue to press [MFG B] to cycle through the new ID parameters. To review the numeric entries in the space file, press [1] and [L SPACE K], then continue pressing the [L SPACE K] key. To review the depth file, press the number set in the minimum depth setting and continue pressing the [R DEPTH M] key through all depth settings.

Special Cutting Instructions

NOTE For nickel silver blanks our ITL MD1027 CARBIDE CUTTER should be used.

Cutting keys generated by Master Key Program

1. Generate Master Key system. Follow instructions on page 17.
2. Push [-] [0] [MFG B] This will enable use of the Generated system.
3. Select key number from printed chart Press (key number), [MFG B] or continue to press [MFG B]. to cycle through the generated system.
4. Press [CUT S] when desired key is displayed.

General Motors

General Motors and other keys that have deep cuts close to the shoulder.

1. Input code in the regular fashion.
2. Push [C.F. C] key four times, display will read **PLUNGE = NONE**
3. Push [-] key twice to **PLUNGE = FIRST**.
4. Push [CUT S] key twice. Move vise right to **0000,** the screen will now display **CUT TO CONTINUE.** Press [CUT S], the cutter motor will start, wait until the cutter rests on the bottom of the cut.
5. Turn the handle counter clockwise to complete the remainder of the cuts in a regular fashion

Non Biaxial Medeco (MFG 298,299,302)

Note CW1012 cutter should be installed for Medeco. 1 flat should be set to 14 thousands.

To cut a key with a code 1 LEFT, 2 CENTER, 2 RIGHT, 1 CENTER, 2 LEFT push the [1] [L SPACE K], [2], [2] [R DEPTH M], [1], [2] [L SPACE K] then [CODE D] [CUT S]. Note the center cuts are set by default. The first angle (C) will flash. Now proceed to cut all center cuts. Push [CUT S] move the vise to 0000 and push [CUT S] move the vise to 0000 and push [CUT S] The second angle will flash (L) turn the cutter head to the new angle and push [CUT S]. The third angle (R) will flash turn the cutter head to the new angle and push [CUT S] move the vise to 0000 and push [CUT S]. Note the ITL950C will cut all center cuts first then all left cuts, then all right cuts.

PROGRAMING THE ITL950C

For special instrutions on writing code for the ITL950C Phone 1 888 264-6627.

SETTING SERIAL PORT PARAMETERS
SETTING BAUD RATE

Enter the EDIT mode by pressing the [-] [1] [2] [3] [MFG B] keys. Press [CODE D] twice to enter the Serial port setup routine. Display will read **BAUD RATE =8.** Use the table below to select a baud rate. For example to set the baud rate to 4800, locate the correct baud rate (in this case 7). Now enter the selected baud rate [7] and press [CODE D] to save the new baud rate or [CLEAR] to erase or correct your entry. Pressing [CLEAR] with no number entered and you will exit the Serial setup routine without changing the baud rate.

BAUD RATE	SELECT CODE
75	1
150	2
300	3
600	4
1200	5
2400	6
4800	7
9600	8

ERROR MESSAGES

INVALID MFG **ID**	The ID entered is incorrect; the valid range is 0 through 960." 0" is a special case used to load from the serial port.
INVALID SPACE	The space number or value entered is incorrect. See **EDITING A CUSTOM ID TABLE** for more information.
CODE TOO LONG	The code entered is too long.
SPACE ERROR 10	Space calibration has failed. Check for obstruction. May also be a machine failure.
DEPTH ERROR 11	Depth calibration has failed. Check for obstruction. May also be a machine failure.
INVALID C.F.	Incorrect correction factor. Range is 9 to -9.
NO CODE SET	You must enter both an ID and Code before cutting a key.
OUT OF RANGE	Space or depth calibration value exceeds limits. Range is 127 to -127.
INVALID FLAT #	Incorrect fiat # entered. Range is 1 through 10.
INVALID INSERT #	Incorrect insert # entered. Range is 1 through 4.

INVALID MAXSPC 11	Incorrect maximum space number. Range is 1 through 10.
INVALID MAXDPT #	Incorrect maximum depth number. Range is I through 10
INVALID MINDPT #	Incorrect minimum depth number. Range is 0 or 9.
INVALID BAUD RATE	Incorrect baud rate number. Range is 1 through 8.
ERROR LOADING TABLE	Remote code load has failed. Check serial port parameters.
INVALID SPEED RANGE IS 1 TO 4	Incorrect feed rate number. Range is 1 through 4.
INVALID TIP TYPE RANGE IS 0 TO **3**	The tip number selected is invalid. The range is 0 through 3.
INVALID FLAT WIDTH RANGE IS 1 TO **10**	The fiat number selected is invalid. The range is 1 through 10.
INVALID DEPTH RANGE IS 110 TO 465	The depth entered is invalid. The range is 110 TO 465.
INVALID SPACE VALUE RANGE IS 1 TO **10**	The space entered is out of range. The range is 1 to 10.
BAD TABLE ENTRY	The table being loaded has invalid entries. If the entry is a custom ID then recheck your entries. If the entry is in the range of 1 through 800 then check the list of manufacturers and report the error to your distributor. Note that if you select an ID not in the list it will not be correct.
INVALID INSERT CF	The correction value exceeds the allowed range. Range is .009 to -.009.

FLOW CHART TO CUT MEDECO BIAXIAL

1 - Press [3] [0] [0] [MFG B] Display will read **MANUFACTURER 300 INSERT 2 FLAT 1**

2 - Press [-] [4] [MFG B] Display will read **BI-AXIAL ENTERY M0DE SELECTED**

3 - Press [CODE D] Display will read **BI-CODE =**

4 - Enter code, to use **3B, 4K, 5Q, 6D, 2M, 1S.** Press [3] [MFG B], [4] [L SPACE K], [5] [C.F. Q], [6] [CODE D], [2] [R DEPTH M], [1] [CUT S].

Display will now read: **BI-CODE = BKQDMS 3 4 5 6 2 1**

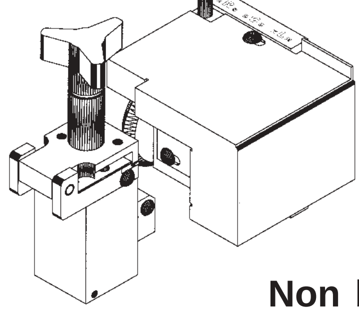
5 - Press [RESET], display will now read: **BI-CODE = 345621 BKQDMS**

6 - Press [CLEAR], display will read **RDY.** Press [CUT S], display will now read: **CUT TO CONTINUE BKQDMS**

The machine makes center cuts first, then left cuts and last the right cuts. the letter B will be flashing indicating the first cut to be made. (ignore the cursuor flashing under the S)

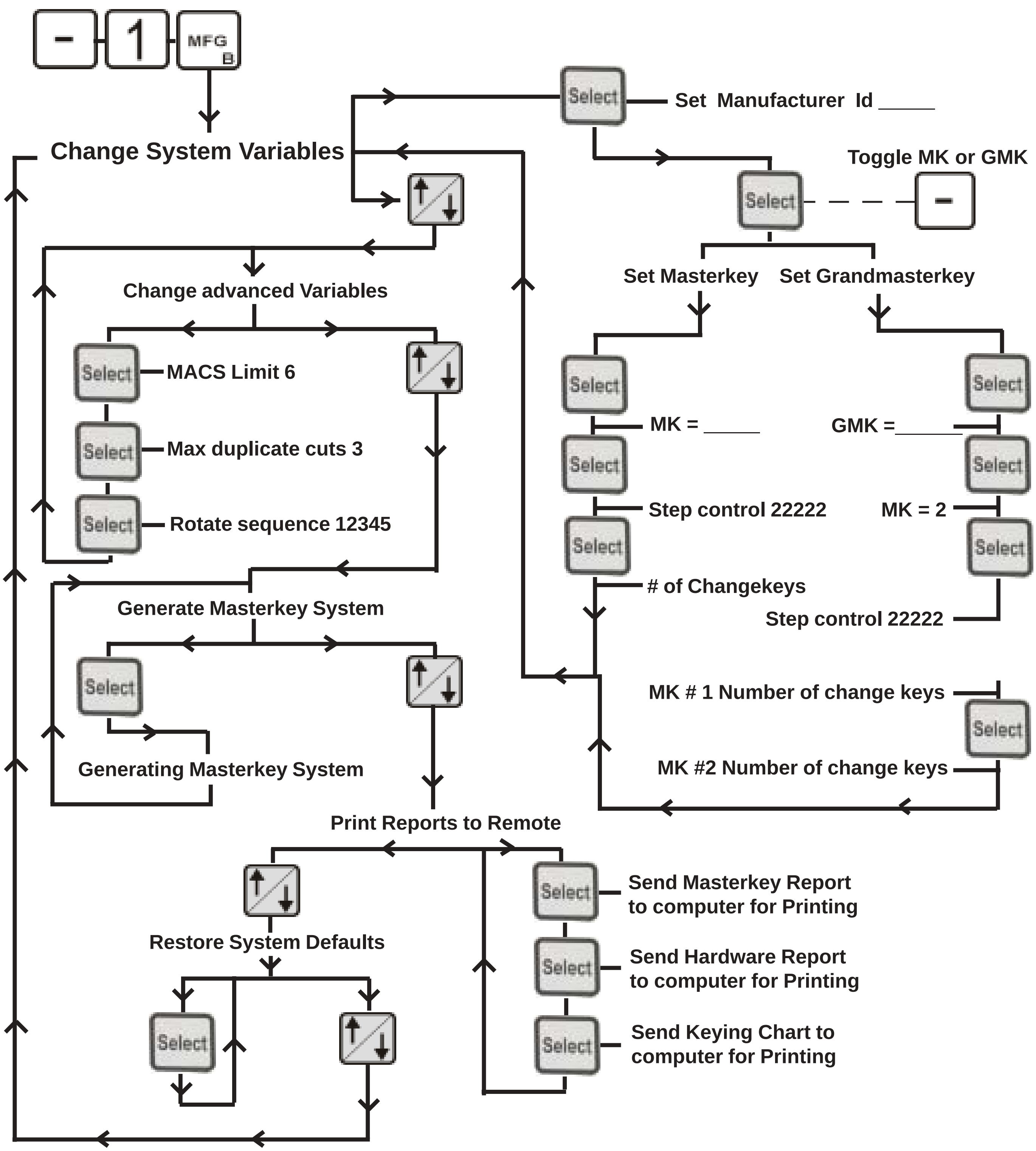
7 - Press [CUT S], display will read **MOVE VICE S > |||||||||||||| BKQDMS** The vise direction indicator will be flashing, turn the space handle clockwise untill the bars disapear, the numbers count down to 0000 and the display reads **CUT TO CONTINUE.**

8 - Press [CUT S] cutter motor will start and the first cut will be made. When the cutter motor stops follow the direction indicator, counterclockwise, to the second cut. When the display reads 0000 and **CUT TO CONTINUE** press [CUT S]. When all the center cuts have been made the display will flash the letter of the first left cut to be made. Remember to change the head angle.Pull out the lock pin on the back of the cutter head. Rotate the head clockwise for left cuts and counter clockwise for right cuts. Make sure the lock pin seats in each location. Press [CUT S] and follow bar graph to next cut position.



Non biaxial medeco on page 13

CREATING A 950C
MASTER KEYING CHART



Go to page 13 for instructions on cutting generated keys. Press CLEAR to exit.

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